

## Patent Claims

1. Method for providing data for a control system of a milk cooling arrangement (4) with at least one cooling tank (6) of a milking system, in which cooling-tank-related as well as milk-specific data on at least a few milking stations are determined and these are made available to the control system.
2. Method according to Claim 1, in which the milk-specific data contain information about the amount of milk milked, temperature, flow velocity and/or specific heat capacity of the milk.
3. Method according to Claim 1 or 2, in which the cooling-tank-related data contain information about the amount of milk located in the cooling tank (6), storage capacity, residual capacity, temperature, cooling performance and/or state of a cooling installation.
4. Method according to Claim 1, 2 or 3, in which the control system is provided with data on individual animals, data specific to groups and herds, statistical data and/or milking parlor management data.
5. Method for cooling of milk in a milk cooling arrangement (4) with at least one cooling tank (6) and at least one cooling device of a milking system with the following steps:
  - a) Determination of the amount of milk milked at least in one milking parlor as well as a temperature of the amount of milk milked, which is led at least partly into at least one cooling tank (6);
  - b) Determination of an amount of milk as well as a temperature of the amount of milk in the cooling tanks (6), to which the milked amount of milk will be led;
  - c) Determination of at least one characteristic quantity from the data determined in steps a) and b)
  - d) Activation of the cooling installation when at least one characteristic quantity is outside a tolerance field, especially when it exceeds a set threshold value.
6. Method according to Claim 5, in which the amount of heat of the milked amount of milk and/or a theoretical mixing temperature in the cooling tank (6) is determined.

7. Method according to Claim 5 or 6, in which the temperature of the milked amount of milk is estimated and/or measured.
8. Method according to Claim 7, in which the temperature of the milked amount of milk at the milking station and/or at the inlet into the cooling tank (6) is determined.
9. Method according to one of Claims 5 to 8, in which the milked amount of milk is predicted from data on individual animals.
10. Method according to one of Claims 5 to 9, in which the milked amount of milk is determined directly or indirectly, especially by measuring the amount of the milk or from the data of a milk pump.
11. Method according to Claim 8, 9 or 10, in which a first approximate value for the characteristic quantity of the data on individual animals is determined and the cooling device is activated when the approximate value is outside a tolerance field, especially when it exceeds a set threshold value.
12. Method according to at least one of the previous Claims 5 to 11, in which the time is determined at which the amount of milk milked arrives into the cooling tank (6).
13. Method according to one of Claims 5 to 11, in which the milking system has several milking stations, whereby at at least one milking station, preferably at all milking stations, at least one determination is performed of the amounts of milk milked at the respective milking stations.
14. Method according to Claim 13, in which the characteristics quantities are determined in at least a few milking stations.
15. Method according to Claim 13, in which the characteristic quantity is determined centrally, preferably in a herd-management system.
16. Method according to one or several of the previous Claims 5 to 15, in which, as a function of at least one characteristic quantity and/or of the expected and/or actually milked amount of milk, the latter is passed into different cooling tanks (6).

17. Control system of a milk cooling arrangement with at least one cooling tank (6), whereby this has a signal evaluation device which is provided signals which correspond to cooling-tank-specific and milk-specific data of at least one milking station and has a control element which is in cooperation with the signal evaluation unit and a cooling installation, so that it activates the cooling installation as a function of the signals provided through the signal evaluation unit to the control element.
18. Control system according to Claim 17, characterized by the fact that at least one milking station has a milking station control which is a component of the control system.
19. Control system according to Claim 17, characterized by the fact that the signal evaluation unit is formed by a central data processing installation.
20. Control system according to Claim 17, 18 or 19, characterized by the fact that a herd-management system transmits data, especially data on individual animals, to the signal evaluation device.